

*Presented Soc of Civil Engineers*  
JANUARY 1961 — 2

NO. HY 1

VOLUME 87

PART 2

UNIVERSITY OF HAWAII  
LIBRARY

MAR 8 '61

*Your attention is invited*

**NEWS  
OF THE  
HYDRAULICS  
DIVISION  
OF  
ASCE**



JOURNAL OF THE HYDRAULICS DIVISION  
PROCEEDINGS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS

January 1961-2

UNIVERSITY OF HAWAII  
LIBRARY

MAR 8 '61

NEWS  
OF THE

HYDRAULICS

DIVISION  
OF

ASCE



---

## DIVISION ACTIVITIES

### HYDRAULICS DIVISION

---

#### Proceedings of the American Society of Civil Engineers

---

#### NEWS

January, 1961

#### THE PURPOSE OF THE HYDRAULICS DIVISION

"The advancement and dissemination of scientific and engineering knowledge in all branches of hydraulics, hydrology, hydraulic engineering and water resources. In particular this shall embrace meteorology and hydrology as the sciences dealing with the occurrence of water in the atmosphere, on the earth surface and in the ground, fluid mechanics for the understanding of all flow phenomena, applied hydraulics for the design and planning of hydraulic structures and of comprehensive systems, and those social, economic and administrative aspects basic to the conservation and utilization of water as an essential natural resource."

#### COMMITTEES

##### New Chairmen

The list of committee membership given in the November 1960 Newsletter should be supplemented by noting that Frank B. Campbell is the Chairman of the Standards Committee and R. L. Smith is the Chairman of the Water Resources Planning Committee.

##### Water Resources Coordinating Committee

This committee, which has been active on an interim basis since 1958 following the Report of the Horner Committee, was advanced to a continuing status by the Board of Direction at the Boston convention. Their statement is quoted as follows:

"VOTED to establish a Water Resources Coordinating Committee on a continuing basis, to consist of six members appointed by and to report to the Committee on Division Activities, to comprise one member each from the Executive Committees of the Hydraulics, Irrigation and Drainage, Power, Sanitary Engineering and Waterways and Harbors Divisions,

---

Note.—No. 1961-2 is Part 2 of the copyrighted Journal of the Hydraulics Division, Proceedings of the American Society of Civil Engineers, Vol. 87, No. HY 1, January, 1961. Copyright 1961 by the American Society of Civil Engineers.



and the sixth to serve as chairman without vote and not to be a member of said Executive Committees; two members to be appointed each year for 3-year terms to provide a rotating membership."

#### Task Force on Wave Mechanics

Consideration is currently being given to the advisability of establishing a task force to look into the interest of civil engineers in the mechanics of water waves. At present, neither the Waterways and Harbors Division nor the Hydraulics Division has a committee or task force considering the problems of wave mechanics, although it is known that considerable work on waves is currently being done at several hydraulics research laboratories across the country.

### EXECUTIVE COMMITTEE MEETS

The Executive Committee met on Friday and Saturday, November 18 and 19, 1960, at the Palmer House, Chicago, Illinois, with all members present. The following notes were made at the meeting:

#### Phoenix Convention

The Executive Committee confirmed plans for the April 10-14, 1961 ASCE Phoenix Convention.

#### Urbana Conference

The Executive Committee reviewed and gave approval to the preliminary program plan for the August 16-18, 1961 Hydraulics Division Conference to be held on the University of Illinois campus at Urbana, Illinois. Plans are being made for three morning and three afternoon technical sessions.

### WATER RESOURCES COMMITTEES MEET

The five Water Resources Committees also met in Chicago at the Palmer House. The Water Resources Planning Committee met on Thursday and Friday, November 17 and 18, 1960, while the Flood Control Committee, Ground Water Hydrology Committee, Hydrometeorology Committee, and the Surface Water Hydrology Committee all met on Friday and Saturday, November 18 and 19, 1960. The following notes were made at their meetings:

#### Water Resources Planning Committee

This was the initial meeting of this new committee. Arrangements were made for presentation of papers at the Phoenix convention in April 1961. Probable presentation of papers at the Houston Convention in February 1962 was also discussed. In view of the forthcoming reports by the U.S. Study Commission, Texas, and by the Bureau of Reclamation on water resource development in Texas, it is probable that there will be enough interest to devote one or more sessions at the Houston convention to that subject. The committee also discussed plans for an active study of standards, procedures, and policies for water resources planning in relation to present and future needs of the Nation.

Ground Water Hydrology Committee

The Committee has planned as one of its major activities in the coming year to point out the needs existing for research in ground water hydrology. To assist the Committee, suggestions and comments will be most welcome. Items should be sent to the Committee Chairman, Dr. David K. Todd, 412 Hesse Hall, University of California, Berkeley 4, California.

Hydrometeorology Committee

The committee discussed the proposed scope of their activities. A subcommittee was formed to survey the use of neutron-scatter devices for soil moisture measurement and another subcommittee will survey the present knowledge with regard to urban influences on climate. Arrangements were made with the Flood Control Committee for a joint session at the Urbana Hydraulics Division Conference.

"PHOENIX ASCE CONVENTION

The following sessions will be sponsored by the Hydraulics Division at the April 10-14, 1961 ASCE Convention at the Hotel Westward Ho in Phoenix, Arizona:

Tuesday morning - April 11, 1961

A session with a water resources theme sponsored by the Hydraulics Division. Presiding: Maurice L. Dickinson, Chairman, Executive Committee, and (co-chairman to be announced later).

Transmission Losses of Streamflow in Ephemeral Sand Bed Channels of the Southwest

Robert V. Keppel, Project Supervisor, Soil and Water Conservation Research Division, Agricultural Research Service, Tucson, Arizona.

Some Effects of Irrigation on the Quality of Streamflow, Colorado River Basin

William V. Iorns, Hydraulic Engineer, U.S. Geological Survey, Salt Lake City, Utah.

Transition Zone at the Interface in Coastal Aquifers

Dr. Jacob Bear and Dr. David K. Todd, Associate Professor of Civil Engineering, University of California, Berkeley, California.

Tuesday afternoon - April 11, 1961

A joint session of Waterways and Harbors Division, Irrigation and Drainage Division and Hydraulics Division on river stabilization. Hydraulics Division shares in sponsorship, but provides neither presiding officials nor papers.

Wednesday morning - April 12, 1961

A joint session of the Waterways and Harbors Division, Irrigation and Drainage Division, Power Division, Sanitary Division, and Hydraulics Division, on multiple use projects. Primary arrangements are the



responsibility of the Waterways and Harbors Division. Hydraulics Division is to provide one paper which is described below.

### Economics of Multipurpose Project Planning

Reed A. Elliot, Chief, Division of Water Control Planning, Tennessee Valley Authority, Knoxville, Tennessee.

#### Wednesday afternoon - April 12, 1961

A joint session, under the same Divisions' sponsorship as the Wednesday morning session, on research in water resources, with Colonel Edmund H. Lang, Waterways and Harbors Division, in charge of arrangements. Hydraulics Division is to provide one paper which is described below.

### Research Studies in Ground Water Motion

Herbert E. Skibitzke, Mathematician in Charge, Research Section, Ground Water Branch, U.S. Geological Survey, Phoenix, Arizona.

#### Thursday morning - April 13, 1961

A joint session, under the same Divisions' sponsorship as the Wednesday sessions, on water resources, with all papers from the Hydraulics Division.

Presiding: Maurice L. Dickinson, Chairman, Executive Committee, and Herbert S. Riesbol, Water Resources Coordinator, Hydraulics Division

### Climatic Trends in the Southwest as Indicated by Archaeological and Pollen Investigations

Dr. Fred Wendorf, Associate Director for Anthropology, Museum of New Mexico, Santa Fe, New Mexico.

### Evaporation Suppression Studies on Sahuaro Lake, Arizona

Q. L. Florey, Head, Applied Physics Unit, Division of Engineering Laboratories, Bureau of Reclamation, G. E. Koberg, Project Hydrologist, General Hydrology Branch, U.S. Geological Survey, and L. O. Timblin, Jr., Head, Physical Investigations Laboratory Section, Division of Engineering Laboratories, Bureau of Reclamation, all of Denver, Colorado.

### Inter-Aquifer Flow through Irrigation Wells

Benjamin E. Lofgren, Hydraulic Engineer, Ground Water Branch, U.S. Geological Survey, Sacramento, California

#### Thursday afternoon - April 13, 1961

A session on hydraulic structures sponsored by the Hydraulics Division. This session is separate from those arranged under the coordinated water resources theme.

Presiding: Maurice L. Dickinson, Chairman, Executive Committee, and Rex A. Elder, Member, Committee on Hydraulic Structures.

Pipe Flow with Artificial Roughness

Harry H. Ambrose, Professor of Hydraulics, Department of Civil Engineering, University of Tennessee, Knoxville, Tennessee.

Resistance Coefficients in Large Conduits

Robert G. Cox, Chief, Analysis Section, Hydraulics Division, Waterways Experiment Station, Vicksburg, Mississippi.

Discharge Measurements by Pitot Traverses in 96-inch Square Conduit

Rex A. Elder, Head, Hydraulic Laboratory, Tennessee Valley Authority, and Marvin N. Smith, Hydraulic Engineer, Hydraulic Laboratory, Tennessee Valley Authority, both of Norris, Tennessee.

Friday morning - April 14, 1961

A session on sedimentation sponsored by the Hydraulics Division. This session is separate from those arranged under the coordinated water resources theme.

Presiding: Maurice L. Dickinson, Chairman, Executive Committee, and Robert B. Banks, Chairman, Committee on Sedimentation

Backscour During Floods Above Pits and Basins

Paul Baumann, Consulting Engineer, Sierra Madre, California.

Stationary Waves and Antidunes in Alluvial Channels

John F. Kennedy, Research Fellow, California Institute of Technology, Pasadena, California.

Tractive Force Fluctuations Around the Perimeter of Open Channels as Determined from Point Velocity Measurements

Phillip F. Enger, Hydraulic Engineer, U.S. Bureau of Reclamation, Denver, Colorado.

Total Sediment Transport in the Lower Colorado River

John R. Sheppard, Hydraulic Engineer, U.S. Bureau of Reclamation, Denver, Colorado."

GENERAL NEWS

California Passes State Water Plan Bond Issue

California voters recently approved a 1-3/4 billion dollar bond issue to finance features of its State Water Plan program. The program considers water resource development over a large part of the state until the year 2040. Bonds will be sold over a 25-year period beginning in 1964.



Vicksburg Fire

On the early morning of October 3, 1960, the Administration Building of the Waterways Experiment Station, Corps of Engineers, Vicksburg, Mississippi, was almost completely destroyed by fire. Total damages are estimated to be about \$1,700,000. The exact cause of the fire has not been determined. Losses include valuable computing, printing and camera equipment; administrative records, files, correspondence and reports, and the entire technical library including over 75,000 items plus the card index of 275,000 reference cards, published indices, bibliographies and translations. The effected offices have been relocated and the Station reports that, except for a temporary interruption of their library service, the technical capabilities of the Waterways Experiment Station have not been impaired in any way because of this fire loss.

Senate Select Committee on National Water Resources

The committee is expected to have a report ready for the new Congress in January. Volumes of "Hearings" are available and the Committee has released a series of reports called "Committee Prints" which can be obtained from the U.S. Government Printing Office. The following is a list of those available (It is understood that a Committee Print No. 32 will also be released.):

## Water Resources Activities in the United States

## Select Committee on National Water Resources United States Senate

Committee Print No. 1	(Charts Giving a Broad Picture of Water Use and Problems in the U.S.)
Committee Print No. 2	Reviews of National Water Resources During the Past Fifty Years
Committee Print No. 3	National Water Resources and Problems
Committee Print No. 4	Surface Water Resources of the United States
Committee Print No. 5	Population Projections and Economic Assumptions
Committee Print No. 6	Views and Comments of the States
Committee Print No. 7	Future Water Requirements for Municipal Use
Committee Print No. 8	Future Water Requirements of Principal Water-Using Industries
Committee Print No. 9	Pollution Abatement
Committee Print No. 10	Electric Power in Relation to the Nations Water Resources
Committee Print No. 11	Future Needs for Navigation
Committee Print No. 12	Land and Water Potentials and Future Requirements for Water
Committee Print No. 13	Estimated Water Requirements for Agricultural Purposes and Their Effects on Water Supplies
Committee Print No. 14	Future Needs for Reclamation in the Western States
Committee Print No. 15	Floods and Flood Control
Committee Print No. 16	Flood Problems and Management in The Tennessee River Basin
Committee Print No. 17	Water Recreation Needs in the United States - 1960-2000



ASCE	Hydraulics Division	1961-2--7
Committee Print No. 18	Fish and Wildlife and Water Resources	
Committee Print No. 19	Water Resources of Alaska	
Committee Print No. 20	Water Resources of Hawaii	
Committee Print No. 21	Evapo-Transpiration Reduction	
Committee Print No. 22	Weather Modification	
Committee Print No. 23	Evaporation Reduction and Seepage Control	
Committee Print No. 24	Water Quality Management	
Committee Print No. 25	River Forecasting and Hydrometeorological Analysis	
Committee Print No. 26	Saline Water Conversion	
Committee Print No. 27	Application and Effects of Nuclear Energy	
Committee Print No. 28	Water Resources Research Needs	
Committee Print No. 29	Water Requirements for Pollution Abatement	
Committee Print No. 30	Present and Prospective Means for Improved Reuse of Water	
Committee Print No. 31	The Impact of New Techniques on Integrated Multiple-Purpose Water Development	

#### FOR YOUR CALENDAR

##### ASCE Meetings

April 10-14, 1961	ASCE, Phoenix Convention
August 16-18, 1961	Hydraulics Division Conference, Urbana, Illinois
October 16-20, 1961	ASCE, New York Convention
February 19-23, 1962	ASCE, Houston Convention
May 14-18, 1962	ASCE, Omaha Convention
October 8-12, 1962	ASCE, Detroit Convention

##### Non-ASCE Meetings

March 28-30, 1961	National Water Research Symposium, sponsored by National Reclamation Association and National Association of Soil Conservation Districts, Washington, D.C.
June 26-July 2, 1961	Seventh Congress International Committee on Large Dams, Rome, Italy
September 3-7, 1961	Ninth IAHR Convention, Belgrade, Yugoslavia
September 6-8, 1961	Seventh Midwestern Conference on Fluid Me- chanics and Soil Mechanics, Michigan State University, East Lansing, Michigan
June 18-21, 1962	Fourth National Congress of Applied Mechanics, University of California, Berkeley, California

## USE OF THE HYDRAULICS DIVISION NEWSLETTER

You are urged to use the Division Newsletter for announcements, inquiries, personnel news, committee reports, surveys and other items of interest to Division members. A short note summarizing the highlights of committee meetings is particularly requested. Suggestions for improvement of the Newsletter will be appreciated. All contributions are appreciated.

Deadline dates for Newsletter contributions: March 1961 issue—January 20; May 1961 issue—March 20.

Fred A. Bertle  
4475 Carr Street  
Wheat Ridge, Colorado

## ASCE MANUAL ON SEWAGE TREATMENT PLANT DESIGN

The result of several years of work by a joint committee of the Sanitary Engineering Division of ASCE and the Water Pollution Control Federation (formerly the Federation of Sewage and Industrial Wastes Associations) is available in a manual entitled "Sewage Treatment Plant Design." In this manual the joint committee has summarized and interpreted current practice in the design of sewage treatment plants. The committee does not attempt to approve or disapprove the practice, but merely reports what is being done.

Copies of ASCE Manual 36 can be obtained by use of the coupon herewith. The list price is \$7.00, with ASCE members and libraries receiving a 50% discount. Engineers who are members of WPCF but not of ASCE are urged to order their copies through the Federation so that the member discount of 50% will be available to them.

-----CUT HERE-----

American Society of Civil Engineers  
33 West 39th Street, New York 18, New York

Please send me . . . copy(s) of Manual 36. Enclosed is my remittance of \$ . . . (List price \$7.00).

My ASCE membership grade is . . .

-----

Print Name

Address

City

Zone

State

. . . of M36





FILED IN STACKS

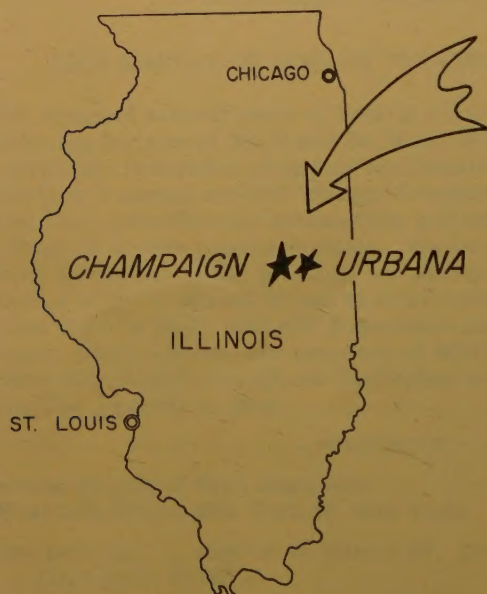
# 10<sup>TH</sup> NATIONAL CONFERENCE

## HYDRAULICS DIVISION

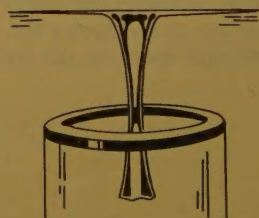
---

AMERICAN SOCIETY OF CIVIL ENGINEERS

---



**AUGUST**  
**16, 17, 18,**  
**1961**



PLAN NOW TO ATTEND THIS CONFERENCE IN THE LAND OF LINCOLN  
WATCH FOR ANNOUNCEMENTS IN CIVIL ENGINEERING  
AND HYDRAULICS DIVISION NEWSLETTER

YOUR LOCAL HOSTS:

*BE OUR GUESTS IN '61*

*CENTRAL ILLINOIS SECTION  
UNIVERSITY OF ILLINOIS*



# AMERICAN SOCIETY OF CIVIL ENGINEERS

FILED IN STACKS

OFFICERS FOR 1961

## PRESIDENT

GLENN W. HOLCOMB

## VICE-PRESIDENTS

*Term expires October 1961:*

CHARLES B. MOLINEAUX  
LAWRENCE A. ELSENER

*Term expires October 1962:*

DONALD H. MATTERN  
WILLIAM J. HEDLEY

## DIRECTORS

*Term expires October 1961:*

THOMAS J. FRATAR  
EARL F. O'BRIEN  
DANIEL B. VENTRES  
CHARLES W. BRITZIUS  
WAYNE G. O'HARRA  
FRED H. RHODES, JR.  
N. T. VEATCH

*Term expires October 1962:*

ELMER K. TIMBY  
SAMUEL S. BAXTER  
THOMAS M. NILES  
TRENT R. DAMES  
WOODROW W. BAKER  
BERNHARD DORNBLATT

*Term expires October 1963:*

ROGER H. GILMAN  
HENRY W. BUCK  
EARLE T. ANDREWS  
JOHN B. SCALZI  
JOHN D. WATSON  
HARMER E. DAVIS

## PAST PRESIDENTS

*Members of the Board*

FRANCIS S. FRIEL

FRANK A. MARSTON

---

## EXECUTIVE SECRETARY

WILLIAM H. WISELY

## TREASURER

E. LAWRENCE CHANDLER

## ASSISTANT SECRETARY

DON P. REYNOLDS

## ASSISTANT TREASURER

LOUIS R. HOWSON

---

# PROCEEDINGS OF THE SOCIETY

HAROLD T. LARSEN

*Manager of Technical Publications*

PAUL A. PARISI

*Editor of Technical Publications*

MARVIN L. SCHECHTER

*Associate Editor of Technical Publications*

IRVIN J. SCHWARTZ

*Assistant Editor of Technical Publications*

---

## COMMITTEE ON PUBLICATIONS

THOMAS M. NILES, *Chairman*

WAYNE G. O'HARRA, *Vice-Chairman*

★ BERNHARD DORNBLATT

HENRY W. BUCK

JOHN D. WATSON

HARMER E. DAVIS